

HDH-AL3 Room CO₂ Alarm / Transmitter

HDH-AL3 has been designed for monitoring and control of CO₂ levels in room spaces. The transmitters have three alarm LEDs indicating high CO₂ concentration. The transmitters have 2 x 0..10Vdc outputs for transmitting the CO₂ measurement and the space temperature to BMS and control systems. RH-models have also output for relative humidity.

The display can be configured to show CO₂ concentration, temperature or alternate the both measurements.

The alarm LEDs have three colours; green, amber and red. Green indicates acceptable CO₂ level, amber indicates medium CO₂ level (above 750ppm) and red indicates high CO₂ level (1250ppm).

The transmitters are also available with relative humidity (%rH) measurement and Modbus RTU485 communication.

The CO₂ transmitter is automatically calibrated using ABCLogic™. ABCLogic is a result of over 10 years R&D for the CO₂ measurement. ABCLogic measures the background CO₂ level and uses the advanced statistical analysis to correct the readings automatically, removing the need for expensive calibration.



Model Type	Model	Description
	HDH-AL3	Room CO ₂ Alarm Display with CO ₂ and Temperature Analogue Outputs
	HDH-RH-AL3	Room CO ₂ Alarm Display with CO ₂ , Temperature and Humidity Analogue Outputs
	HDH-M-AL3	Room CO ₂ Alarm Display with CO ₂ and Temperature Analogue Outputs, Modbus RTU 485 Communication
	HDH-M-RH-AL3	Room CO ₂ Alarm Display with CO ₂ , Temperature and Humidity Analogue Outputs, Modbus RTU 485 Communication
Technical Data	Power supply	24Vac (15...28V) / 1VA 24Vdc (15...36V) / 1W
	Alarm LEDs	Green LED; Normal Concentration of CO ₂ Yellow LED; Medium Concentration of CO ₂ (above 750ppm) Red LED; High Concentration of CO ₂ (above 1250ppm)
	Outputs	CO ₂ : 0..10V < 2mA °C: 0..10V < 2mA %rH (RH-option): 0..10V < 2mA
	Range	CO ₂ : 0...2000ppm CO ₂ Temperature: 0..50°C Humidity (RH-option): 0..100%
	Accuracy - CO ₂	± 40ppm + 3% of the reading @ 25°C (ABCLogic™)
	Accuracy - Temperature	±0.5°C
	Accuracy - Humidity	±2% rH
	Stability / Year	<2% FS (ABCLogic™)
	Temperature dependence	0.2% FS / °C
	Pressure dependence	0.17% reading/mbar
	Operating temperature	0°C...+50°C

	Ambient humidity	0...95%rh (non-cond.)
	Response time (0...90%)	<1min
	Warm-up time	<10 min
	Housing	ABS-plastic, IP 20
	Dimensions	W87 x H86 x D32mm
Wiring Terminals	1 - 24V	24Vac/dc power supply
	2 - 0V	0V common
	3 - CO2	CO2 output: 0..10Vdc = 0..2000ppm CO ₂
	4 - TE	Temperature output: 0...10Vdc = 0...50°C
	5 - AO3	RH-Models: Humidity output 0..10Vdc = 0..100%rH M-Models: Configurable 0..10Vdc Modbus Register / Controller Output
ABCLogic™ & Calibration	ABCLogic™ is a patented self-calibration technique, that is designed to be used in applications where concentrations will drop to outside conditions (appr. 400 ppm) at least twice in a week period (= an unoccupied building). For applications that do not see periodic ambient conditions, ABCLogic can be turned off but a regular single point calibration of the sensor in 6 -12 months is necessary. Checking and calibration is recommended every 5th year even if ABCLogic is on.	
HDH-AL3 Start-Up	<ol style="list-style-type: none"> 1. Install the device. Connect the power supply and outputs. CO2 concentration output is available at terminal 3 and temperature output at terminal 4. 2. Let the transmitter be connected and warm-up for 10 min before reading the values. If the display has been fitted, it is alternating CO2 and temperature. 	
HDH-AL3 LED Operation	<p>HDH-AL3 unit LEDs have been designed to indicate the CO2 (room air quality) levels in the room space. Three built-in bright LEDs are used for this purpose.</p> <p>Green LED indicates that the CO2 level is normal</p> <p>Amber LED indicates that the CO2 level has raised above 750ppm.</p> <p>Red LED indicates that the CO2 level is high above 1250ppm.</p>	
Modbus Communication (M-Models Only)	<p>HDH-M models have built-in Modbus RTU RS485 communication. The Modbus communication settings are configured by removing temporarily 3 LED alarm card and by inserting HDH-C configuration card. Via the Modbus communication it is possible to read the CO2, temperature and humidity readings and configure the CO2/Temp/rH controller feature for AO3 or set the AO3 via Modbus network (e.g. using it for zone control).</p> <p>For detailed description of the Modbus communication parameters and how to configure the Modbus communication network please refer to <i>SN.176-HDH-M.pdf</i> data sheet (HDH with Modbus communication).</p>	

Dimensions

